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(54) TITULO DE LA INVENCION

PLANCHA DE FIBRA DE VIDRIO AGLOMERADO

(71) SOLICITANTE (S)

CRISTALERIA ESPAÑOLA, S.A.

DOMICILIO DEL SOLICITANTE

28046 MADRID - Pº. de la Castellana, 77

(72) INVENTOR (ES)

DON VICENTE PALACIOS SAGREDO

(73) TITULAR (ES)

CRISTALERIA ESPAÑOLA; S.A.

(74) REPRESENTANTE

LUIS PLAZA 481 (2)

UNE A-4 Mod. 3.204.—

UTILICESE COMO PRIMERA PAGINA DE LA MEMORIA

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Este Modelo de Utilidad se refiere a una plancha de fibra de vidrio aglomerado, obtenida de una forma determinada, asì como al sistema de fabricaciòn con esta forma determinada.

Es conocida la fabricaciòn de planchas de fibra de vidrio aglomerado con resinas sintèticas, utilizadas en mùltiples aplicaciones, como por ejemplo, para conductos de ventilaciòn, refrigeraciòn, etc.

Las planchas fabricadas hasta ahora son de forma rectangular, con sus cuatro lados cortados rectos. Las planchas asì obtenidas, cuando es necesario al pie de obra fabricar un conducto, se hace un rebaje o canteado en los dos laterales, para de esta forma encastrar un conducto con otro. La forma de hacer este canteado es sencillamente con una cuchilla, reduciendo asì el espesor de la plancha en el borde, concretamente de 25 a 12,5 mm. Con esto, los bordes de la plancha quedan muy mermados en sus resistencias mecànicas, ya que en el borde se reducia a un panel de fibra de 70 kg/m^3 y con el espesor antes citado de 12,5 mm.

Teniendo encuenta tambièn que en el reparto transversal del gramaje en el panel se tiene una tolerancia del 10% podemos encontrar hasta 63 kg/m^3 de densidad, agravando asì el problema de la menor resistencia de los bordes.

Dado que el punto de uniòn es la zona màs debil del conducto, cuando este se pone en carga, por ejemplo con aire acondicionado, existe un gran riesgo de que el conducto reviente por esta zona. Para evitarlo se recurre a dotar a los conductos de refuerzos con bandas o cintas autoadhesivas, de escayola, etc.

Como es fàcil de comprender, la utilizaciòn posterior de refuerzos, de cualquier naturaleza, ademàs de significar un gasto adicional en material, es tambièn un gasto adicional en mano de obra y tiempo de trabajo.

El sistema propuesto evita desechos de material en cantidad importante, por el sistema anterior se desperdi cian, en cada panel de 3 metros, 30 mm por ancho por 6 metros de largo.

La plancha obtenida segùn el Modelo se basa en la obtenciòn en la lìnea de producciòn de las planchas con el canteado ya rectificado de manera que ya no sea necesaria ninguna operaciòn adicional en obra en el momento de montar los conductos.

Ademàs, al ser obtenido el canteado por moldeado, no por cortado, no se reduce la densidad, teniendo en este caso una densidad de 140 kg/m^3 (el doble que el resto de la plancha).

Este aumento en la densidad y el no tener que romper las fibras con el corte con cuchilla, hace aumentar la resistencia mecànica de los bordes de una forma muy importante y por tanto aumenta la resistencia mecànica de los conductos encastrados.

Para la obtenciòn de las planchas con estas caracte rìsticas, ha sido necesario transformar todos los transportes de la estufa de polimerizaciòn, de manera que fuera posible introducir unos tacos laterales que permitieran hacer el canteado.

Como es conocido en el gremio, la lana de vidrio, antes de polimerizar, es un producto amorfo y muy similar a lo que podrìa ser una manta de algodòn. Para que la lana de vidrio se convierta en un panel con unas ciertas resistencias mècanicas es necesario impregnar la lana con unas resinas termoendurecibles y polimerizar estas resinas, dando asì consistencia al producto.

Si en el momento de polimerizar, la plancha de fibra se conforma de alguna manera, se consigue a la vez la polimerizaciòn y la forma determinada que se desee obtener.

Como tambièn es sabido, la estufa de polimerizaciòn

consiste en dos tapices paralelos, entre los cuales pasa la lana de fibra, impregnada de resina. A su vez los taices estàn perforados de manera que a travès de estas perforaciones y de la lana, pasa un aire caliente que polimeriza el producto y son mòviles para poder dar al producto el espesor deseado y hacer avanzar la lana en continuo.

Asu vez los tapices estàn formados por paletas de una anchura determinada para que puedan articularse y es precisamente en estas paletas donde se ha introducido el perfeccionamiento para poder obtener la plancha canteada.

Se adjunta una hoja de dibujos, en la cual:

La figura 1ª es una vista en perspectiva del tapiz, con las piezas conformadoras incorporadas.

La figura 2ª es una vista lateral de la pieza conformadora superior, situada sobre el tapiz.

Y la figura 3ª es una vista lateral de la pieza conformadora inferior.

Segùn se represneta en la figura 2ª, la pieza conformadora superior -1-, presenta en uno de sus laterales, un rebaje en forma de L, -2-, mediante el cual, en el momento de pasar por debajo la manta de fibra, se producirà en la misma el canteado en sentido inverso.

En la representaciòn de la figura 3ª, la pieza conformadora -3-, presenta una forma rectangular. Graduando la colocaciòn de la misma en el tapiz, se irà produciendo en la manta, a medida que vaya pasando sobre la misma, el rebajo del canto en sentido inverso al del borde opuesto.

El resultado final muestra una plancha con alas sobresalientes en las partes superior e inferior, de manera que a la hora de montar una conducciòn, ambos canteados son perfectamente ensamblables, con las

ventajas tècnicas anteriormente citadas.

REIVINDICACIONES

1.- Plancha de fibra de vidrio aglomerado, caracterizada porque de una estufa de polimerización, las paletas de que están dotados los tapices, se constituyen de manera que la paleta superior presenta en uno de sus bordes un rebaje en forma de L, mientras que la paleta inferior es de bordes en ángulo recto, de manera que la disposición de una y otra sobre el tapiz, conforma rebajes en los cantos de las planchas de fibra de vidrio, y en consecuencia la conformación contrapuesta de éstos rebajes, permite que en la construcción de una conducción, éstos cantos sean ensamblables.

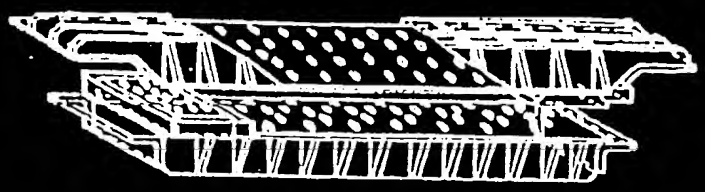

FIG. 1

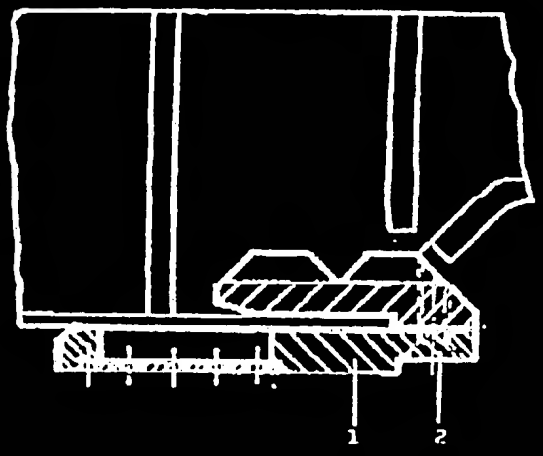

FIG. 2

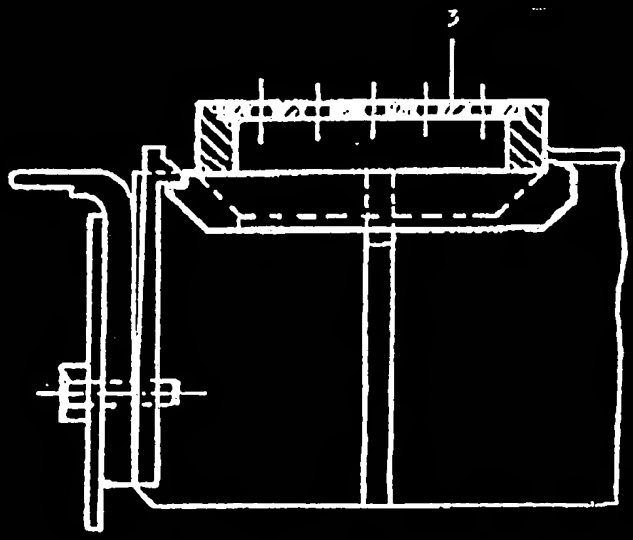

FIG. 3

SPANISH OFFICE OF PATENTS AND TRADEMARKS 11 NUMBER 10 Y

19 ES 21 9402661

[seal] 22 DATE SUBMITTED
APRIL 6, 1993

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[punched stamp:] 12/20/1994

UTILITY MODEL

30 PRIORITIES
31 NUMBER 32 DATE 33 COUNTRY

47 DATE PUBLISHED 51 INTERNATIONAL CLASSIFICATION [hw:] 6
[hw:] C08J 5/08

54 TITLE OF THE INVENTION

FIBERGLASS AGGREGATE BOARD

71 APPLICANT (S)

CRISTALERÍA ESPAÑOLA, S.A.

APPLICANT'S ADDRESS
28046 MADRID – Paseo de la Castellana 77

72 INVENTED BY
MR. VICENTE PALACIOS SAGREDO

73 TITLE HOLDER(S)
CRISTALERÍA ESPAÑOLA, S.A.

74 REPRESENTATIVE
[stamp:] LUIS PLAZA 481 (2)

UNE A-4 Form 3204 USE AS FIRST PAGE OF REPORT

This Utility Model refers to an fiberglass aggregate board obtained in a specific shape, as well as the manufacturing system with this specific shape.

The manufacturing of fiberglass boards bound with synthetic resins, used in multiple applications, such as for example for ventilation ducts, refrigeration, etc., is known.

The boards manufactured until now are rectangular in shape, with their four sides cut square. The boards thus obtained, when it is necessary at the foot of the work to manufacture a duct, a notch or beveling is made on the two sides, so as to insert one duct into the other. The way to do this beveling is simply with a knife, thus reducing the thickness of the board at the edge, specifically from 25 to 12.5 mm. With this, the mechanical resistances of the edges of the board are much reduced, because at the edge it is reduced to a fiber panel of 70 kg / m^3, with the aforementioned thickness of 12.5 mm.

Also keeping in mind that in the transversal distribution the grammage of the panel has a tolerance of 10%, we can find up to 63 kg / m^3 in density, thus aggravating the problem of the lower resistance of the edges.

Given that the join point is the weakest part of the duct, when it is loaded, for example with air conditioning, there is a considerable risk that the duct will break in that area. To avoid this, the ducts are reinforced with bands or self-adhesive tape, plaster, etc.

As is easy to understand, the subsequent use of reinforcements of any nature, besides implying an additional cost of materials, is also an additional labor and work time expense.

[cut off stamp]

The proposed system avoids a large amount of wasted material, the old system wasted, on each 3 meter panel, 30 mm of width by 6 meters of length.

The board obtained according to the Model is based on obtaining on the production line boards with the beveling already rectified so that no additional work is necessary at the time the ducts are mounted.

Furthermore, because the beveling is obtained by molding and not by cutting, the density is not reduced, in this case having a density of 140 kg / m^3 (twice that of the rest of the panel).

This increase in density and noting having to break the fibers by cutting with a knife, causes a very significant increase in the mechanical resistance of the edges and therefore it increases the mechanical resistance of the joined ducts.

To obtain boards with these features, all the polymerization kiln conveyors have had to be transformed so as to make it possible to insert lateral blocks that allow the beveling to be performed.

As is known in the union, glass wool, before polymerizing, is an amorphous product very similar to a cotton blanket. For the glass wool to be converted into a panel with certain mechanical resistances it is necessary to impregnate the wool with some thermohardening resins and to polymerize those resins, thus giving consistency to the product.

If when polymerized the fiber board is shaped in some manner, the polymerization and the specific shape desired are obtained at the same time.

As is also known, the polymerization kiln

consists of two parallel curtains that the fiber wool impregnated with resin passes through. In turn the curtains are perforated so that hot air passes through the perforations and the wool, which polymerizes the product and are movable so as to be able to give the product the desired thickness and to move the wool forward continuously.

The curtains are in turn formed by pallets of a specific width so that they can be articulated and it is precisely on those pallets where the improvement has been made to be able to obtain the beveled board.

A drawing sheet is attached, on which:

Figure 1 is a view from the perspective of the curtain, with the shaping pieces included.

Figure 2 is a lateral view of the upper shaping piece, located on the curtain.

And Figure 3 is a lateral view of the lower shaping piece.

As shown in Figure 2, the upper shaping piece – 1 – has on one side an L-shaped notch – 2 – through which, at the time the fiber blanket passes below it, the beveling will be produced on it in the reverse direction.

In the representation in Figure 3, the shaping piece – 3 – has a rectangular shape. Graduating the placement of it on the curtain, the cant of the beveling will be produced gradually on the blanket in the reverse direction of the opposite edge, as it passes over it.

The final result shows a board with overhanging wings on the upper and lower parts, so that at the time a duct is mounted, both bevels can be mounted perfectly, with the

aforementioned advantages.

[stamp:] 103023[illegible]

CLAIMS

1. A fiberglass aggregate board characterized by the pallets on the curtains contained in the polymerization kiln made so that the upper pallet has on one of its edges an L-shaped notch, whereas the lower pallet has straight angle edges, so that the disposition of both over the curtain forms notches in the edges of the fiberglass boards and as a result the inverse formation of those notches allows those edges to be mounted in the construction of a duct.

[stamp:] 103023[illegible]

[3 figures]

[perforated stamp:] 12/20/1994

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[3 figures]